

## CLAIMS

1. (currently amended) An explosive composition comprising RDX Type I, a polyacrylic elastomer and a plasticizer, wherein the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP)

characterised in that the RDX crystals represent a proportion in the range 88-96% by weight of the composition, and that the RDX crystals comprises a portion of coarse crystals with an average crystal size in the range 50 to 250  $\mu\text{m}$  and a portion of finer crystals with average crystal size in the range 2 to 30  $\mu\text{m}$ .

2. (currently amended) An explosive composition comprising explosive crystals of RDX Type I and HMX, a polyacrylic elastomer and a plasticizer, wherein the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP)

characterised in that the explosive crystals represent a proportion in the range 88-96% by weight of the total composition, that the RDX crystals comprises a portion of coarse crystals with an average crystal size in the range 50 to 250  $\mu\text{m}$  and a portion of finer crystals with average crystal size in the range 2 to 30  $\mu\text{m}$ , and that the HMX crystals represent a proportion in the range from 5 to 20% by weight of the explosive crystals in the composition.

3. (previously presented) An explosive composition according to claim 1 or 2,

characterised in that the explosive crystals represent from 90 to 94% by weight of the composition.

4. (previously presented) An explosive composition according to claim 1 or 2, characterised in that the coarse portion of the RDX crystals comprises crystals with an average size in the range 60 to 170 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 5-20 $\mu$ m.

5. (previously presented) An explosive composition according to claim 1 or 2, characterised in that the coarse portion of the RDX crystals represents from 25 to 75% by weight.

6. (cancelled)

7. (cancelled)

8. (previously presented) An explosive composition according to claim 2, characterised in that the HMX crystals have an average size in the range from 2 to 30 $\mu$ m.

9. (currently amended) An explosive composition produced in a water-slurry process, characterised in that it comprising 88-96% of a coarse-grained and fine-grained RDX Type I and a binder system consisting of a polyacrylic elastomer and a plasticizer, and where RDX is present in a proportion of relatively coarse-grained and a proportion of fine-grained crystals wherein the coarse portion of the RDX crystals comprises crystals with an average size in the range 60 to 170 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 5-20 $\mu$ m.

10. (currently amended) An explosive composition produced in a water-slurry process, characterised in that it consists of 88-96% of explosive crystals and a binder system comprising a polyacrylic elastomer and a plasticizer, where the explosive crystals are a mixture of RDX crystals of Type I and HMX crystals, and where RDX is present in a proportion of relatively coarse-grained and a proportion of fine-grained crystals, wherein the coarse portion of the RDX crystals comprises crystals with an average size in the range 60 to 170µm, and that the fine portion of the RDX crystals has an average size in the range 5-20µm.

11. (original) An explosive composition according to claim 9 or 10, characterised in that the proportion of explosive crystals represents from 90 to 94% by weight and preferably from 91 to 93% by weight of the total composition.

12. (cancelled)

13. (previously presented) An explosive composition according to claim 9 or 10, characterised in that the coarse portion of the RDX crystals represents from 25 to 75% by weight.

14. (original) An explosive composition according to claim 9 or 10, characterised in that the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP).

15. (previously presented) An explosive composition according to claim 11,

characterised in that the proportion of HMX crystals represents from 5 to 20% by weight, of the total quantity of explosive crystals in the composition.

16. (previously presented) An explosive composition according to claim 11, characterised in that the HMX crystals have an average size in the range from 2 to 30 $\mu$ m, .

17. (previously presented) An explosive composition according to claim 3, characterised in that the explosive crystals represent from 91 to 93% by weight of the composition.

18. (previously presented) An explosive composition according to claim 4, characterised in that the coarse portion of the RDX crystals comprises crystals with an average size in the range 60-90 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 5-20 $\mu$ m.

19. (previously presented) An explosive composition according to claim 4, characterised in that the coarse portion of the RDX crystals comprises crystals with an average size in the range 60 to 170 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 12-18 $\mu$ m.

20. (previously presented) An explosive composition according to claim 4, characterised in that the coarse portion of the RDX crystals comprises crystals with an average size in the range 60-90 $\mu$ m, and that the fine portion of the RDX crystals has an average size in the range 12-18 $\mu$ m.

21. (previously presented) An explosive composition according to claim 5,  
characterised in that the coarse portion of the RDX crystals represents from 35 to 65% by weight.
22. (previously presented) An explosive composition according to claim 5,  
characterised in that the coarse portion of the RDX crystals represents from 44 to 56% by weight.
23. (previously presented) An explosive composition according to claim 7,  
characterised in that the portion of HMX crystals represents from 5 to 15% by weight of the total quantity of explosive crystals in the composition.
24. (previously presented) An explosive composition according to claim 7,  
characterised in that the portion of HMX crystals represents from 9 to 11% by weight of the total quantity of explosive crystals in the composition.
25. (previously presented) An explosive composition according to claim 8,  
characterised in that the HMX crystals have an average size in the range from 5 to 20µm.
26. (previously presented) An explosive composition according to claim 8,  
characterised in that the HMX crystals have an average size in the range from 8 to 14µm.
27. (currently amended) An explosive composition according to ~~claim 12~~ either of claims 9 or 10,  
characterised in that the coarse portion of the RDX crystals comprising crystals with an average size in the range 60-

90µm, and that the fine portion of the RDX crystals has an average size in the range 5-20µm.

28. (currently amended) An explosive composition according to ~~claim 12~~ either of claims 9 or 10, characterised in that the coarse portion of the RDX crystals comprising crystals with an average size in the range 60 to 170µm, and that the fine portion of the RDX crystals has an average size in the range 12-18µm.

29. (currently amended) An explosive composition according to ~~claim 12~~ either of claims 9 or 10, characterised in that the coarse portion of the RDX crystals comprising crystals with an average size in the range 60-90µm, and that the fine portion of the RDX crystals has an average size in the range 12-18µm.

30. (previously presented) An explosive composition according to claim 13, characterised in that the coarse portion of the RDX crystals represents from 35 to 65% by weight.

31. (previously presented) An explosive composition according to claim 13, characterised in that the coarse portion of the RDX crystals represents from 44 to 56% by weight.

32. (previously presented) An explosive composition according to claim 15, characterised in that the proportion of HMX crystals represents from 5 to 15% by weight—of the total quantity of explosive crystals in the composition.

33. (previously presented) An explosive composition according to claim 15, characterised in that the proportion of HMX crystals

represents from 9 to 11% by weight of the total quantity of explosive crystals in the composition.

34. (previously presented) An explosive composition according to claim 16,

characterised in that the HMX crystals have an average size in the range from 5 to 20µm.

35. (previously presented) An explosive composition according to claim 16,

characterised in that the HMX crystals have an average size in the range from 8 to 14µm.

36. (currently amended) A bimodal explosive composition comprising explosive crystals of RDX, HMX, or combinations thereof , a polyacrylic elastomer and a plasticizer, wherein the composition has a pressability of 98% TMD or greater at a pressure of 1000 bar or less, and wherein the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP), and further wherein RDX crystals represent a proportion in the range 88-96% by weight of the composition, and that the RDX crystals comprises a portion of coarse crystals with an average crystal size in the range 50 to 250 µm and a portion of finer crystals with average crystal size in the range 2 to 30 µm.

37. (previously presented) A bimodal explosive composition according to claim 36, having a pressability of 98% TMD or greater at a pressure of 500 bar or less.

38. (previously presented) A bimodal explosive composition according to claim 36, wherein the explosive crystals are RDX, and wherein the composition has a pressability of 98% TMD or greater at a pressure of in the range of 250 to 1000 bar,.

39. (previously presented) A bimodal explosive composition according to claim 36, having a pressability of 99% TMD or greater at a pressure in the range of 500 to 1000 bar.

40. (previously presented) A bimodal explosive composition according to claim 36, having a pressability of 99% TMD or greater at a pressure in the range of 250 to 500 bar.

41 (cancelled).

42. (currently amended) ~~A bimodal explosive composition according to either of claims 36-40~~ A bimodal explosive composition comprising explosive crystals of RDX, HMX, or combinations thereof , a polyacrylic elastomer and a plasticizer, wherein the composition has a pressability of 98% TMD or greater at a pressure of 1000 bar or less, wherein the polyacrylic elastomer is Hy Temp 4454 or Hy Temp 4054, and that the plasticizer is dioctyl adipate (DOA), dioctyl sebacate (DOS), isodecyl pelargonate (IDP), dioctyl maleate (DOM) or dioctyl phthalate (DOP), and further wherein the explosive crystals represent a proportion in the range 88-96% by weight of the total composition, that the RDX crystals comprises a portion of coarse crystals with an average crystal size in the range 50 to 250  $\mu\text{m}$  and a portion of finer crystals with average crystal size in the range 2 to 30  $\mu\text{m}$ , and that the HMX crystals represent a proportion in the range from 5 to 20% by weight of the explosive crystals in the composition.